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EXAMINER	
JOO, JOSHUA	

ART UNIT	PAPER NUMBER
2154	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/055,650	TRAVERSAT ET AL.	
	Examiner	Art Unit	
	JOSHUA JOO	2154	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 December 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-64* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-64* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *1/22/02* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Detailed Action

1. This Office action is in response to communicated dated 12/19/2007.

Claims 1-64 are presented for examination.

Response to Arguments

2. Applicant's arguments filed 12/19/2007 have been fully considered but they are not persuasive. Applicant argued that:

3. (1) The invention disclosed in Davis is directed to network transport layers and network transport protocols. The Examiner seems to imply that the system of Black should be modified to include the "peer-to-peer communication and protocols" of Davis and Drake. Black already provides a messaging scheme that supports different transport protocols. No modification to include peer-to-peer communication and protocols are necessary to meet the Examiner's suggested goal.

4. In response, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). To further clarify Examiner's rejection, Davis teaches of the claimed "said establishing, said transmitting, said receiving, and said retransmitting" (said steps) and teaches of peers communicating with each other. The "said establishing, said transmitting, said receiving, and said retransmitting" between peers are considered as the peer-to-peer platform protocols. Davis does not specifically teach that the peer-to-peer platform protocols as taught by Davis are distinct from a network transport protocol. Black teaches of a system for a messaging protocol that is independent, i.e. distinct, of network transport protocols.

The Examiner is not implying that the system of Black should be modified to include "peer-to-peer communication and protocols" but that the suggested system of Davis and Drake should be modified

with Black for the peer-to-peer platform protocols as taught by Davis to be implemented as a messaging protocol that is independent from network transport protocols as taught by Black. The features of "said establishing, said transmitting, said receiving, and said retransmitting" in transport protocol and peer-to-peer protocols (which will be addressed below) are well known in the art in the art. It would have been obvious to one of ordinary skill in the art to implement the peer-to-peer platform protocols as taught by Davis as protocol independent of transport protocols as taught by Black, which would improve Davis' teachings by allowing the peer-to-peer platform protocol including said steps as taught by Davis to be implemented regardless of the transport protocols and provide reliable data transmission for different transport protocols.

5. (2) Applicants assert that a computer may "function as a peer in a peer-to-peer network" without necessarily including a peer-to-peer platform comprising any of the specific peer-to-peer platform protocols recited in claim 1.

6. In response, claim 1 recites, inter alia, "one or more peer-to-peer platform protocols for enabling the plurality of peer nodes to discover each other, communicate with each other, and share content in the peer-to-peer environment…" Davis teaches of peers communicating with each other and sharing content with each other (col. 8, lines 21-24; col. 9, lines 1-8, 23-24). The peers of Davis are able to communicate with each other, and therefore, it is essential that the peers are enabled to obtain information regarding other peers, i.e. discover, in order to communicate with the other peers. The rules in which the peers discover, communicate, and share as taught by Davis are considered as the claimed peer-to-peer platform protocols.

7. (3) Davis does not mention anything endnodes discovering each other. The mere fact that a channel may be established between two endnodes does not imply that the two nodes are "enabled to

discover each other". Applicant asserts that the claim does not merely recited that the peer nodes are somehow made known to each other, but that they are enabled to discover each other.

8. In response, Davis teaches of peers communicating with each other and sharing content with each other (col. 8, lines 21-24; col. 9, lines 1-8, 23-24). The peers of Davis are able to communicate with each other, and therefore, it is essential that the peers are enabled to obtain information regarding other peers, i.e. discover other peers, in order to communicate with the other peers.

9. (4) Davis, Dreke, and Black fail to teach or suggest any peer-to-peer protocols for enabling peers to discover each other, wherein to discover comprises obtaining an address for each discovered node. Davis in view of Dreke does not teach a protocol that enables a protocol to discover each other, according to the limitations of claim 1. Applicants further note that there are many ways that a device may obtain an address for another device that do not involve peer-to-peer platform protocol.

10. In response, Examiner respectfully disagrees that Davis does not teach a protocol that enables a protocol to discover each other. It was shown in response to argument 4 that Davis teaches of peer-to-peer protocols for enabling peers to discover each other. Davis does not expressly teach of "wherein to discover comprises obtaining an address for each discovered node". Dreke teaches of a peer obtaining an address for other peers. The rules for obtaining the address of another peer and communicating with other peers as taught by Davis and Dreke are also considered as "peer-to-peer platform protocols". Applicant argued that Davis and Dreke's teachings are not according to the claimed "peer-to-peer platform protocols" and that there are many ways that a device may obtain an address for another device that do not involve peer-to-peer platform protocol. However, the claims do not distinguish the claimed peer-to-peer platform protocol from the "many ways". The teachings of Davis and Dreke teach the scopes of "peer-to-peer platform protocols" for "enabling the plurality of peer nodes to discover each other, communicate with each other, and share content in the peer-to-peer environment…"

11. (5) Davis in view of Dreke and Black fail to teach or suggest wherein said establishing, said transmitting, said receiving, and said retransmitting are performed according to at least one of the one or more peer-to-peer platform protocols and wherein said peer-to-peer platform protocols are distinct from the at least one network transport protocols.

12. In response, Examiner respectfully disagrees that Davis in view of Dreke and Black fail to teach or suggest the argued features. Davis teaches of said establishing, said transmitting, said receiving, and said retransmitting between devices in a network protocol. Davis further teaches of peers that communicate with each other. The said establishing, said transmitting, said receiving, and said retransmitting between the peers are considered as the peer-to-peer platform protocols. Davis does not specifically teach that the peer-to-peer platform protocols are distinct from the at least one network transport protocols. Black teaches of a system for a messaging protocol between devices that is independent, i.e. distinct, from a network transport protocol. It would have been obvious to one of ordinary skill in the art to implement the peer-to-peer platform protocols as taught by Davis as an protocol that is independent of a network transport protocol as taught by Black. Black's teachings would improve Davis' teachings by allowing the peer-to-peer platform protocol including said steps as taught by Davis to be implemented regardless of the transport protocols and provide reliable data transmission for different transport protocols.

Claim Rejections - 35 USC § 112

13. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

14. Claims 1-64 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claim 1, the amended feature of "said peer-to-peer platform protocols are distinct from the at least one network transport protocols" is not supported by the instant specification. The instant specification provides support for phrases such as "transport protocol independent", "absence of help from other applications and/or services" or "regardless of the implementation of that connection", but does provide support for "distinct" such that "said peer-to-peer platform protocols are distinct from the at least one network transport protocols".

Regarding claims 25 and 45, the amended features of "the at least one of the one or more peer-to-peer platform protocols is distinct from any underlying network transport protocols" is not supported by the instant specification. The instant specification provides support for phrases such as "transport protocol independent", "absence of help from other applications and/or services" or "regardless of the implementation of that connection", but does provide support for "distinct" such that "said peer-to-peer platform protocols is distinct from any underlying network transport protocols ".

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

16. Claims 1-3, 5-7, 11-15, 18, 21-22, 25-27, 29-31, 35-40, 43, 45-47, 49-51, 55-60, and 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davis et al. US Patent #6,105,064 (Davis

hereinafter), in view of Dreke et al. US Publication #2002/0035594 (Dreke hereinafter) and Black et al. US Patent #5,878,056 (Black hereinafter).

17. As per claim 1, Davis teaches substantially the invention as claimed including a method, system, and an article of manufacture for dynamically adjusting windows in a peer computing system, Davis's teachings comprising:

a plurality of peer nodes operable to couple to a network (col. 8, lines 21-24. Peer nodes.), wherein each of the plurality of peer nodes comprises one or more network interfaces; wherein each network interface is configured to communicate over the network in accordance with at least one or more network transport protocols (col. 9, lines 5-8. Endnodes establish network communication session. Col. 5, lines 40-44. Protocol for controlling data packets.);

wherein the plurality of peer nodes is configured to implement a peer-to-peer environment on the network according to a peer-to-peer platform comprising one or more peer-to-per platform protocols (col. 8, lines 21-24. Peer-to-peer network.) for enabling the plurality of peer nodes to discover each other, communicate with each other; and share content in the peer-to-peer environment (col. 75, lines 3-5. Sending endnode request connection with receiving endnode. col. 9, lines 1-8, 23-34. Establish connection for sending data.);

wherein one of the plurality of peer nodes is configured to:

establish a communications channel between a network interface of the peer node and a network interface of another of the plurality of peer nodes(col. 9, lines 5-8. Endnodes establish network communication session.);

transmit messages to the other peer node over the communications channel (col. 9, lines 25-28; col. 59, lines 1-3. Transmits data.);

receive acknowledgement that one or more of the transmitted messages have been received by the other peer node (col. 59, lines 1-3. Acknowledges packets.); and

retransmit messages not acknowledged as received by the other peer node to the other peer node on the communications channel (col. 73, lines 44-47. Unacknowledged packets are retransmitted.).

18. Davis teaches substantial features of the claimed invention including said establishing, said transmitting, said receiving, and said retransmitting in a peer-to-peer environment (peer-to-peer platform protocol). Davis does not specifically teach to discover comprising of obtaining an address for each discovered peer node and that the one or more peer-to-peer platform protocols are distinct from the at least one network transport protocols.

19. Dreke teaches of a peer obtaining IP addresses of interested peers and peers interested in the peer (paragraph 0017).

20. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings for peers to obtain the IP addresses of other peers. The motivation for the suggested combination is that Dreke's teachings would provide contact information including last known information of peers to allow a peer to contact other peers (Paragraphs 0018-0019).

21. Davis and Dreke still do not specifically teach that the communicating in the at least one of the one or more peer-to-peer platform protocols is performed separately from the at least one network transport protocols.

22. Black teaches of implementing a messaging system that is independent of transport protocols (col. 10, lines 63-67).

23. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings for the peer-to-peer protocols as taught by the suggested system to be implemented as a messaging protocol that is independent of transport layer as taught by Black. The motivation for the suggested combination is that Black's teaching would improve the suggested system

by allowing the specific messaging scheme in the suggested system to support different transport protocol (col. 10, lines 63-67).

24. As per claims 25 and 45, Davis teaches substantially the invention as claimed including a method, system and a computer-readable storage medium for dynamically adjusting windows in a peer computing system, Davis's teachings comprising:

a plurality of peer nodes operable to couple to a network (col. 8, lines 21-24. Peer nodes.), wherein each of the plurality of peer nodes comprises one or more network interfaces; wherein each network interface is configured to communicate over the network in accordance with at least one or more network transport protocols (col. 9, lines 5-8. Endnodes establish network communication session. Col. 5, lines 40-44. Protocol for controlling data packets.);

wherein the plurality of peer nodes is configured to implement a peer-to-peer environment on the network according to a peer-to-peer platform comprising one or more peer-to-per platform protocols (col. 8, lines 21-24. Peer-to-peer network.) for enabling the plurality of peer nodes to discover each other, communicate with each other; and share content in the peer-to-peer environment (col. 75, lines 3-5. Sending endnode request connection with receiving endnode. col. 9, lines 1-8, 23-34. Establish connection for sending data.);

wherein one of the plurality of peer nodes is configured to:

establish a communications channel between a network interface of the peer node and a network interface of another of the plurality of peer nodes(col. 9, lines 5-8. Endnodes establish network communication session.);

transmit messages to the other peer node over the communications channel (col. 9, lines 25-28; col. 59, lines 1-3. Transmits data.);

receive acknowledgement that one or more of the transmitted messages have been received by the other peer node (col. 59, lines 1-3. Acknowledges packets.); and

retransmit messages not acknowledged as received by the other peer node to the other peer node on the communications channel (col. 73, lines 44-47. Unacknowledged packets are retransmitted.).

25. Davis teaches substantial features of the claimed invention including said establishing, said transmitting, said receiving, and said retransmitting in a peer-to-peer environment (peer-to-peer protocols). Davis does not specifically teach to discover comprising of obtaining an address for each discovered peer node and that the at least one of the one or more peer-to-peer platform protocols is distinct from any underlying network transport protocols.

26. Dreke teaches of a peer obtaining IP addresses of interested peers and peers interested in the peer (paragraph 0017).

27. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings for peers to obtain the IP addresses of other peers. The motivation for the suggested combination is that Dreke's teachings would provide contact information including last known information of peers to allow a peer to contact other peers (Paragraphs 0018-0019).

28. Davis and Dreke still do not specifically teach that the communicating in the at least one of the one or more peer-to-peer platform protocols is performed separately from the at least one network transport protocols.

29. Black teaches of implementing a messaging system that is independent of transport protocols (col. 10, lines 63-67).

30. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings for the peer-to-peer protocols as taught by the suggested system to be

implemented as a messaging protocol that is independent of transport layer as taught by Black. The motivation for the suggested combination is that Black's teaching would improve the suggested system by allowing the specific messaging scheme in the suggested system to support different transport protocol (col. 10, lines 63-67).

31. As per claims 2, 26, and 46, Davis teaches the invention in claims 1, 25, and 45, wherein, to transmit messages to the other peer node over the communications channel, the peer node is further configured to:

generate messages (col. 29, lines 54-60. Data is send. col. 10, line 9-20. Messages.);

buffer the messages, and after a window of N messages has been buffered, transmit the N messages to the other peer node over the communications channel, wherein N is an integer greater than one (col. 29, line 51-60. Window size is determined for transmission of packet. col. 49, line 61-col. 50, line 55. Data is buffered prior to transmission.).

32. As per claims 3, 27, and 47, Davis teaches the invention as recited in claims 2, 26, and 46, wherein the other peer node is configured to receive the transmitted messages, and after receiving M messages, transmit the acknowledgement to the peer node indicating that the M messages have been received, where M is a positive integer less than or equal to N (col. 30, lines 66-67. Sends acknowledgments to the number of received packets. col. 59, lines 34-35. Acknowledges to packets received.).

33. As per claims 5, 29, and 49, Davis teaches the invention as recited in claims 3, 27, and 47, wherein M is less than N (col. 29, lines 64-66. Lost packets. col. 30, lines 66-67. Acknowledge receipt of packets.).

34. As per claims 6, 30, and 50, Davis teaches the invention as recited in claims 5, 29, and 49, wherein, to receive acknowledgement that one or more of the transmitted messages have been received by the other peer node, the peer node is further configured to receive the acknowledgement indicating that M messages have been received (col. 30, lines 65-67. Sends acknowledgement of packets received.), and wherein the peer node is further configured to:

shift the window in the buffer by M messages (col. 30, lines 65-67. Shift window by number of packets acknowledged.); and

transmit the messages in the shifted window to the other peer node over the communications channel (col. 29, lines 51-60. Send packets according to window size.).

35. As per claims 7, 31, and 51, Davis teaches the invention as recited in claims 6, 30, and 50, wherein the shifted window includes one or more messages previously transmitted to the other peer node and one or more messages not previously transmitted to the other peer node (col. 30, line 1-8. Changes window size and retransmits the packet. col. 29, lines 51-60. Send packets according to window size.).

36. As per claims 11, 35, and 55, Davis teaches the invention as recited in claims 1, 25, and 45, wherein each of the messages includes a sequence number for use in ordering the received messages on the other peer node (col. 2, lines 13-16. Packets are assigned sequence numbers. Receiver places data in original order.).

37. As per claims 12, 36, and 56, Davis teaches the invention as recited in claims 3, 27, and 47, wherein the peer node and the other peer node are further configured to:

monitor the reception and retransmission of the messages to determine reliability of the communications channel on the network (col. 30, lines 65-57. Receives acknowledgement of packets received. col. 32, lines 15-29. Examines results of through measurements, detects bandwidth.); and

adjust the values of M and N according to said reliability of the communications channel (col. 30, lines 65-67; col. 31, lines 1-3. Size of window is changed according to acknowledgements. col. 32, lines 18-22. Changes window size according to network conditions.).

38. As per claims 13, 37, and 57, Davis teaches the invention as recited in claims 12, 36, and 56 wherein, to adjust the values of M and N, the peer node and the other peer node are further configured to lower the values of M and N if said reliability of the communications channel is poor (col. 31, lines 61-63; col. 31, lines 1-7. Decrease window size if packets are lost.).

39. As per claims 14, 38, and 58, Davis teaches the invention as recited in claims 12, 36, and 56, wherein, to adjust the values of M and N, the peer node and other peer node are further configured to raise the values of M and N if said reliability of the communication channel is good (col. 26, lines 57-64; col. 30, lines 65-67. Increase window size according to acknowledgements.).

40. As per claims 15, 39, and 59, Davis teaches the invention as recited in claims 1, 25, and 45, wherein the other peer node is configured to (col. 8, lines 19-24. Any computer may function as a peer, and as a client and server. col. 8, lines 34-35. Different computer assume the sending and receiving roles.):

transmit other messages to the peer node over the communication channel (col. 59, lines 1-3. Transmits packets.);

receive acknowledgement that one or more of the transmitted other messages have been received by the peer node (col. 59, lines 1-3. Acknowledges packets.); and

retransmit messages not acknowledged as received by the peer node to the peer node on the communications channel (col. 73, lines 44-47. Unacknowledged packets are retransmitted.).

41. As per claims 18 and 40, Davis teaches the invention as recited in claims 1 and 25, wherein the communications channel passes through one or more relay peers, wherein the one or more relay peers are configured to receive the transmitted messages from the peer node and forward the messages to the other peer node (col. 8, lines 3-5. Server may configured as a networked peer. col. 8, lines 29-31. Server acts as an intermediate node between sending endnode and receiving endnode.).

42. As per claim 21, Davis teaches the system wherein any peer node in a plurality of peer nodes may communicate with each other (Col 8, lines 19-24), wherein a node transmit messages to a second computer and receive messages from a third computer (Col 8, lines 37-40). Davis also teaches of transmitting messages to peer nodes, receive acknowledgements that one or more the transmitted messages have been received; and retransmitting messages not acknowledged (See rejection to claim 1 above.). Davis does not specifically teach wherein one or more other of the plurality of peer nodes are configured to connect to the communications channel, wherein the peer node is further configured to: transmit messages to the one or more other peer nodes over the communications channel; receive acknowledgements that one or more of the transmitted messages have been received by the one or more other peer nodes; and retransmit messages not acknowledged as received by the one or more other peer nodes to the one or more other peer node on the communications channel.

However, it is well known in the art that a peer is capable of communicating with more than one peer in a peer-to-peer system and that peers may join a peer group. It would have been obvious to one of

ordinary skill in the art to modify the suggested system for the sending node to communicate with more than one receiving endnode, wherein communication involves transmitting messages, receiving acknowledgement, and retransmitting messages not acknowledged to the other peer node, which would increase the sharing of resources in a network.

43. As per claims 22, 43, and 63, Davis teaches the invention as recited in claims 1, 25, and 45, wherein the peer node is further configured to compare elapsed time since the messages were transmitted to a timeout limit and, if the elapsed time exceeds the timeout limit (col. 3, lines 35-36. Col 31, lines 27-38. Expiration of time-out period.), retransmit the messages to the other peer node over the communications channel (col. 73, lines 44-47. Retransmits unacknowledged packets.).

44. As per claim 60, Davis teaches the article of manufacture as recited in claim 45, wherein the software instructions are further executable to implement: configuring the peer node as a relay peer, wherein a communications channel between a third peer node of the plurality of peer nodes and the other peer node passes through the peer node; the relay peer node receiving messages transmitted from the third peer node to the other peer node; and forwarding the messages to the other peer node (col. 8, lines 1-5, 19-24. Server as networked peer. Any computer may also function as a peer. col. 8, lines 29-31. Server acts as intermediate node between sending and receiving endnodes.).

45. Claims 4, 8-10, 28, 32-34, 48, 52-54, are rejected under 35 U.S.C. 103(a) as being unpatentable over Davis, Dreke, and Black, in view of Barker et al, US Patent #5,931,916 (Barker hereinafter).

46. As per claims 4, 28, and 48, Davis does not specifically teach the invention as recited in claims 3, 27, and 47, wherein N is a positive even integer, and wherein M is equal N/2.

47. Barker teaches of a similar system of adjusting the window for the transmission of packets, wherein the receiver sends an acknowledgement after a certain number of messages in a sequence have been received (col. 6, lines 25-31, 63-66).

48. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings to adjust the window for the transmission of packets, wherein the receiving sends an acknowledgement after a certain number of messages in a sequence have been received. The motivation for the suggested combination is that Barker's teachings would allow the sender endnode to remove the acknowledged packets from the queue or buffer, transmit addition packets equal to the number of received packets, and adjust the window size, thereby improving the transmission of packets without data loss. Davis and Barker do not explicitly teach the receiver endnode of receiving N/2 messages. However, since Barker teachings of transmitting an acknowledgement after a certain number or messages, it would have been obvious to one of ordinary skill for the receiver endnode to transmit an acknowledgment after other numbers of messages including N/2 messages.

49. As per claims 8, 32, and 52, Davis teaches the invention as recited in claims 2, 26, and 46, wherein each of the messages includes a sequence number for use in ordering the received messages on the other peer node (col. 2, lines 13-16. Packets are assigned sequence numbers. Receiver places the data back in its original order.), and wherein the other peer node is configured to: receive the transmitted messages (col. 59, lines 34-36. Receives packet.). Davis also teaches of transmitting an acknowledgement to received messages (col. 73, lines 1-4). However, Davis does not explicitly teach that after receiving the first M messages in the sequence of N transmitted messages as indicated by the sequence numbers, transmit the acknowledgement to the peer node indicating that the first M messages have been received, wherein M is a positive integer less than N.

50. Barker teaches of adjusting the window for the transmission of packets comprising receiving first messages in the sequence of N transmitted messages as indicated by the sequence numbers, and transmitting an acknowledgement indicating that the first messages have received, wherein M is a positive integer less than N (col. 6, lines 65-67; col. 7, lines 18-19).

51. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings to adjust the window for the transmission of packets comprising receiving first messages in the sequence of N transmitted messages as indicated by the sequence numbers and transmit an acknowledgement indicating that the first messages have received, wherein M is a positive integer less than N. The motivation for the suggested combination is that Barker's teachings would allow the sender endnode to adjust window size according to the received sequence and remove successfully transmitted packets from its queue or buffer.

52. As per claims 9, 33, and 53, Davis teaches the invention as recited in claims 2, 26, and 46, wherein each of the messages includes a sequence number for use in ordering the received messages on the other peer node (col. 2, lines 13-16. Packets are assigned sequence numbers. Receiver places the data back in its original order.), and wherein the other peer node is configured to: continue receiving the transmitted messages until the first M messages in the sequence of N transmitted messages as indicated by the sequence numbers are received (col. 6, lines 63-67. Sends acknowledgement due to the receipt of a certain number of packets. col. 73, lines 44-47. Packets are transmitted, and acknowledgement is send when the packets are received.) or a timeout limit from the time of initial receipt of one of the sequence of N transmitted messages is exceeded, wherein M is a positive integer less than N (col. 31, line 26-28. Expiration of time out period. col. 73, lines 44-47. Unacknowledged packets are retransmitted.). However, Davis does not specifically teach that if the first M messages in the sequence of N transmitted messages as indicated by the sequence numbers are received, transmit the acknowledgement to the peer

node indicating that a count of messages received in continuous sequence from a first message in the sequence of N transmitted messages is M; and if the timeout limit is exceeded before the first M messages in the sequence of N transmitted messages as indicated by the sequence numbers are received, transmit the acknowledgement to the peer node indicating the count of messages received in continuous sequence from the first message in the sequence of N transmitted messages, wherein the count of messages received in continuous sequence is less than M.

53. Barker teaches of adjusting the window for the transmission of packets, wherein if the first M messages in the sequence of N transmitted messages as indicated by the sequence numbers are received, transmit the acknowledgement to the peer node indicating that a count of messages received in continuous sequence from a first message in the sequence of N transmitted messages is M (col. 7, lines 16-29. Transmits acknowledgment of sequence of received datagram, e.g. 8.) and

if the timeout limit is exceeded before the first M messages in the sequence of N transmitted messages as indicated by the sequence numbers are received, transmit the acknowledgement to the peer node indicating the count of messages received in continuous sequence from the first message in the sequence of N transmitted messages, wherein the count of messages received in continuous sequence is less than M (col. 6, lines 59-66. If time out expires, transmit acknowledgement in respect to consecutively received sequence numbered datagram. The acknowledgement acknowledges all earlier sequenced numbered datagram.).

54. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings to perform the methods of the above paragraph. The motivation for the suggested combination is that Barker's teachings would allow the sender endnode to adjust window size according to the received sequence, prevent retransmission of received sequence of packets, and allow the sender endnode to remove successfully transmitted packets from its queue or buffer.

55. As per claims 10, 34, and 54, Davis teaches the invention as recited in claims 9, 33, and 53, wherein, to receive acknowledgement that one or more of the transmitted messages have been received by the other peer node, the peer node is further configured to receive the acknowledgement indicating that the messages have been received (See rejection to claim 1 above.) However, Davis does not specifically teach the invention, wherein the peer node is further configured to: shift the window in the buffer by the count of messages received in continuous sequence; and transmit the messages in the shifted window to the other peer node over the communications channel.

56. Barker teaches of adjusting the window for the transmission of packets by setting the window based on the sequence of the datagram and transmitting packets based on the window (Col 6, line 59-Col 7, line 2; Col 13, lines 14-19).

57. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings to adjust the window for the transmission of packets by setting the window based on the sequence of the datagram and transmitting packets based on the window. The motivation for the suggested combination is that Barker's teachings would allow the sender endnode to dynamically adjust window size according to the received sequence and improve the flow of traffic by providing highest throughput without dropping packets.

58. Claim 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davis, Dreke, and Black, in view of Ivanoff, US Patent #5,517,622 (Ivanoff hereinafter).

59. As per claims 16, Davis teaches of transmitting messages to the other peer node, receiving the acknowledgement, and retransmitting the message not acknowledged as received (See rejection to claim 1). However, Davis does not specifically teach the peer node comprising an instance of a pipe service executable within the peer node to establish the communications channel.

60. Ivanoff teaches of peer-to-peer system (col. 7, lines 56-57; col. 10, lines 35-38), wherein the peer node comprises an instance of a pipe service to establish a connection (col. 60, lines 49-54; col. 61, lines 1-21).

61. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings for a node to comprise an instance of a pipe service, which would provide different types of service to establish a connection with peer nodes and providing management of connections as taught by Ivanoff.

62. As per claim 17, Davis teaches a receiving endnode that receives the transmitted messages and transmits the acknowledgement to the peer node (See rejection to claim 1 above.) However, Davis does not specifically teach the system wherein the other peer node comprises another instance of the pipe service executable within the other peer node.

63. Ivanoff teaches of peer-to-peer system (col. 7, lines 56-57; col. 10, lines 35-38), wherein the peer node comprises an instance of a pipe service to establish a connection (col. 60, lines 49-54; col. 61, lines 1-21).

64. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings for a node to comprise an instance of a pipe service, which would provide different types of service to establish a connection with peer nodes and providing management of connections as taught by Ivanoff.

65. Claims 19-20, 41-42, 61-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davis, Dreke, and Black, in view of Antur et al, US Patent #6,212,558 (Antur hereinafter).

66. As per claims 19-20, 41-42, 61-62, Davis teaches the invention wherein the communication channel passes through intermediate nodes such as router or a bridge (Col 8, lines 30-31). However, Davis does not specifically teach the invention, wherein the communications channel passes through one or more firewalls or one or more Network Address Translation (NAT) gateways.

67. Antur teaches of a system for implementing security policy, wherein Antur teaches of using network address translators (col. 3, lines 38-67), and firewalls (col. 3, lines 32-36; col. 6, lines 1-4).

68. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings to implement network address translator and firewall, which would improve security of the suggested system by preventing unwanted connections to peer nodes and keeping the IP addresses of peer nodes private from the rest of the network.

69. Claims 23-24, 44, and 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davis, Dreke, and Black, in view of Zhu et al, US Patent #5,768,557 (Zhu hereinafter).

70. As per claims 23, 44, and 64, Davis teaches of assigning sequence numbers to packets to allow the receiver node to order the packets (col. 2, lines 12-16), and retransmitting packets when the receiving endnode does not receive the packets (col. 31, lines 1-3). However, Davis does not specifically teach the invention, wherein the peer node is further configured to: receive a request specifying one or more previously transmitted messages for retransmission by the peer node; and retransmit the specified one or more messages to the other peer node on the communications channel in response to the request.

71. Zhu teaches of receiving a request specifying previously transmitted messages for retransmission (Col 7, lines 44-49), and retransmitting the specified messages to the node (Col 7, lines 56-57).

72. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings to receive a request specifying previously transmitted messages for

retransmission, which would allow the receiver to request data that was not received or request data when previously received data contain errors.

73. As per claim 24, Davis teaches of transmitting packets that contain the sequence number for ordering the packets (col. 2, lines 12-16). However, Davis does not specifically teach the peer computing system, wherein the request specifies a sequence number for each of the one or more specified messages.

74. Zhu teaches of a system for requesting retransmission of packets, wherein the request contains the sequence number of the lost packet (col. 7, lines 49-50).

75. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings for the request to contain the sequence number, which would allow the receiver endnode to request specific individual packets to reorder the sequence without having to request and transmit the entire sequence.

Conclusion

76. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

77. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua Joo whose telephone number is 571 272-3966. The examiner can normally be reached on Monday to Friday 7 to 4.

78. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J. Flynn can be reached on 571 272-1915. The fax phone number for the organization where this application or proceeding is assigned 571-273-8300.

79. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/J. J./
Examiner, Art Unit 2154

/Nathan J. Flynn/
Supervisory Patent Examiner, Art Unit 2154